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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,728	11/06/2001	Mohammad A. Abdallah	42390P5943C	2359

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EXAMINER

ELLIS, RICHARD L

ART UNIT

PAPER NUMBER

2183

DATE MAILED: 01/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/005,728

Applicant(s)

ABDALLAH ET AL.

Examiner

Richard Ellis

Art Unit

2183

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. Claims 16-44 remain for examination.
2. Claims 17 and 26-38 are rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claims 16-20, 25-34 and 35-42 are rejected under 35 USC § 103 as being unpatentable over Sidwell, U.S. Patent 5,859,789, in view of *Visual Instruction Set (VIS (TM)) User's Guide*, Sun Microsystems, March 1997.
4. Claims 17 and 26 are rejected under 35 USC § 103 as being unpatentable over Sidwell, U.S. Patent 5,859,789, in view of *Visual Instruction Set (VIS (TM)) User's Guide*, Sun Microsystems, March 1997. Pages 25-165 and 25-25-166 of the *Intel Pentium (TM) Processor Family Developer's Manual*, Volume 3: Architecture and Programming Manual, is cited to show support for the IMUL instruction with implicit operands.
5. Claims 21-24, 33-34 and 43-44 are rejected under 35 USC § 103 as being unpatentable over Sidwell, U.S. Patent 5,859,789, in view of *Visual Instruction Set (VIS (TM)) User's Guide*, Sun Microsystems, March 1997, and further in view of Lee, U.S. Patent 5,721,697.
Sidwell, Sun, and Lee were cited as prior art references in paper number 8, mailed April 9, 2004.
6. The rejections are respectfully maintained and incorporated by reference as set forth in the last office action, paper number 8, mailed April 9, 2004.
7. Applicant's arguments filed December 21, 2004, paper number 20041221, have been fully considered but they are not deemed to be persuasive.
8. In the remarks, applicant argues in substance:
 - 8.1. That: "Applicant believes, and respectfully submits that the Corrected Official Response mailed on November 2, 2004 was in compliance with the requirements of 37 CFR 1.121. Since it included no changes to an existing claim, no cancellation of a claim and no submission of a new claim, the complete listing the claims [sic] was not required.
Therefore, Applicant does not believe that an extension under 37 CFR 1.136(a) should be required as Applicant returned a compliant response within the one month time period specified."

Applicant is in error in this belief. Applicant's attention is drawn to the first notice of non-compliance, mailed October 25, 2004, paper number 20041025. That notice informed applicant that the October 11, 2004 amendment was non-compliant with 37 CFR 1.121 because the submitted claims section in that amendment (the October 11, 2004 amendment) utilized a status identifier that was not one of the seven allowed status identifiers. Applicant's attention is next drawn to the attached office flyer summarizing the 37 CFR 1.121 requirements, specifically to the last two sentences of the very first paragraph, which read:

"The Office will notify applicants of amendments that are not accepted because they do not comply with revised 37 CFR 1.121 via a Notice of Non-Compliant Amendment. The non-compliant section(s) will have to be corrected and the entire corrected section(s) resubmitted within a set period."

Applicant's attention is drawn to the fact that because the claim section of the amendment of October 11, 2004 was non-compliant, and because applicant had been notified of such non-compliance, that applicant, as per the rules, was required to resubmit the non-compliant sections in compliant form. However, applicant's response to the notice of non-compliance FAILED to resubmit the non-compliant section (the claims section), in flagrant disregard for the requirements as set forth in the office flyer mailed to applicant in the non-compliance letter of October 25, 2004. Therefore, contrary to applicant's "belief", the fact is, applicant was required to resubmit a corrected claims section. What applicant submitted was everything except a corrected claim section, although the requirements clearly stated that the non-compliant section must have been resubmitted. Accordingly, the response mailed on November 2, 2004 was not in compliance with the requirements of 37 CFR 1.121 and was therefore not a proper response to the notice of non-compliance. Accordingly, the first paper submitted by applicant which did comply with 37 CFR 1.121 is the paper submitted on December 21, 2004. As the beginning date for extension of time computations is the mail date of the first notice of non-compliance (see second notice of non-compliance which maintained the existing time period for response) which was October 25, 2004, applicant must purchase a 1 month extension of time to extend his period for response from November 25, 2004 to

December 25, 2004 in order to allow a correct submission on December 21, 2004 to be considered timely. Accordingly, a 1 month time extension has been charged to applicant's deposit account as per the authorization given on page 11 of the document submitted December 21, 2004.

- 8.2. That: "Applicant respectfully submits that the trademark, PENTIUM, is not being used as descriptive of a material or product. Rather what is set forth is, the "instructions of a PENTIUM microprocessor instruction set," which is description of the source of a microprocessor instruction set." (emphasis added)

This is not found persuasive because in applicant's own remarks, applicant admits that the trademark "PENTIUM" (TM) is being used to describe "the source" of a microprocessor instruction set. However, applicant is in error in overlooking the clear language of MPEP § 2173.05(u) which specifically indicates that a trademark used to identify "the source" of a good or product as a limitation in a claim is exactly what renders a claim which uses a trademark indefinite. By identifying "the source" of a product, the claim FAILS to identify any particular material or product, and as a result, renders the claim indefinite. As was clearly pointed out to applicant in the previous final rejection (paper number 8, mailed April 9, 2004), there are at least TEN (10) different particular microprocessors produced by the Intel corporation which carry the trademark PENTIUM (TM), many of which contain different instruction sets. By using the trademark "PENTIUM" to denote the source of the instruction set in the claim, the claim is no longer limited to any one particular PENTIUM (TM) processor from this set of at least ten processors, and therefore, for the reasons stated in MPEP § 2173.05(u) is indefinite.

- 8.3. Applicant additionally has submitted a personal affidavit attesting that the trademark "PENTIUM" specifically identifies a particular product.

Applicant's affidavit is additionally not found persuasive because rather than indicating that the trademark "PENTIUM" identifies one single particular microprocessor with one single particular version of the PENTIUM (TM) instruction set, it instead is evidence that the term "PENTIUM" has become generic and is no longer suitable for trademark protection. Not one of applicant's cited publications indicates that the word "PENTIUM" is a trademark. Additionally, applicant's affidavit potentially opens applicant's attorney up to a charge of

malpractice for intentionally diluting and or damaging the value of the Intel corporation's trademark on the name "PENTIUM" (TM).

- 8.4. That: "With regard to Claim 16 and 35, the Final Office Action says, in pointing out that Sidwell's system could not perform Sun's packed sum of absolute differences without modifications ... [that] Applicant provides some evidence of obviousness. Applicant believes that whether or not Applicant can point out any or all modifications necessary to combine the cited references is not material to the argument. Applicant respectfully submits that no suggestion for such modifications is provided by Sidwell."

This is not found persuasive because applicant's implied argument that Sidwell must provide a suggestion for the modification is in error. The requirements for obviousness instead are:

"Not only the specific teachings of a reference but also reasonable inferences which the artisan would have logically drawn therefrom may be properly evaluated in formulating a rejection." *In re Preda*, 401 F.2d 825, 159 USPQ 342 (CCPA 1968) and *In re Shepard* 319 F.2d 194, 138 USPQ 148 (CCPA 1963).

"Skill in the art is presumed." *In re Sovish*, 769 F.2d 738, 226 USPQ 771 (Fed. Cir. 1985).

"Furthermore, artisans must be presumed to know something about the art apart from what the references disclose." *In re Jacoby*, 309 F.2d 513, 135 USPQ 317 (CCPA 1962).

"The conclusion of obviousness may be made from common knowledge and common sense of a person of ordinary skill in the art without any specific hint or suggestion in a particular reference." *In re Bozek*, 416 F.2d 1385, 163 USPQ 545 (CCPA 1969).

"Every reference relies to some extent on knowledge of persons skilled in the art to complement that which is disclosed therein." *In re Bode*, 550 F.2d 656, 193 USPQ 12 (CCPA 1977).

Additionally, the test of obviousness is:

"whether the teachings of the prior art, taken as a whole, would have made obvious the claimed invention," *In re Gorman*, 933 F.2d at 986, 18 USPQ2d at 1888.

Subject matter is unpatentable under section 103 if it "'would have been obvious . . . to a person having ordinary skill in the art.' While there must be some teaching, reason, suggestion, or motivation to combine existing elements to produce the claimed device, it is not necessary that the cited references or prior art specifically suggest making the combination." *In re Nilssen*, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988).

"Such suggestion or motivation to combine prior art teachings can derive solely from the existence of a teaching, which one of ordinary skill in the art would be presumed to know, and the use of that teaching to solve the same [or] similar

problem which it addresses." *In re Wood*, 599 F.2d 1032, 1037, 202 USPQ 171, 174 (CCPA 1979).

"In sum, it is off the mark for litigants to argue, as many do, that an invention cannot be held to have been obvious unless a suggestion to combine prior art teachings is found *in* a specific reference."

Entire quote from *In re Oetiker*, 24 USPQ2d 1443 (CAFC 1992).

Accordingly, as seen above, Sidwell is not required to disclose or specifically suggest the modification. Instead the measure is what the teachings of Sidwell would suggest to one of ordinary skill in the art, not what Sidwell itself specifically suggests.

- 8.5. That: "With regard to Claims 17 and 26, the Final Office Action insinuates that it would have been obvious to make use of one or more additional implicit operands, citing an example of the IMUL instruction of the PENTIUM (TM) microprocessor instruction set, in order for the combined system of Sidwell and Sun to perform Sun's packed sum of absolute differences, compatible with the PENTIUM microprocessor instruction set. Applicant respectfully submits that since no third reference having an IMUL instruction was relied upon, to make such a rejection is improper."

This is not found persuasive because while it is rather odd that an attorney handling an application owned by the Intel corporation is unaware of the Intel corporation's own processor's instruction sets, for applicant's convince a reference showing the IMUL instruction that uses implicit operands (see pg. 25-165, second sentence in first paragraph of "Description" section) is provided.

- 8.6. That: "Further, Sidwell teaches away from storing carry state to make a packed absolute value and read carry operation dependent on a packed subtract and write carry operation, saying that "The execution units 2, 4, 6 do not hold any state between instructions. Thus subsequent instructions are independent." ... Therefore, even if storing carry state is inherently present in Sun's system, it would not be obvious to combine the system of Sidwell with the system of Sun to perform the operations as set forth by Claims 18, 30, and 39."

This is not found persuasive because applicant is repeating an argument already addressed in the final rejection at paragraph 7.4 (see paper number 8, mailed April 9, 2004) where it was clearly indicated to applicant that in order to perform an absolute value, the carry value is required to be maintained. Because of this fact, one of ordinary skill in the art would have been motivated to maintain the carry state. Furthermore, as pointed out in paragraph 7.5 of the final office action (paper number 8, mailed April 9, 2004) the fact that Sidwell teaches

that the execution units do not hold state is immaterial because no execution unit holds state in any system. The state storage units are external to the execution units. Therefore, Sidwell was merely indicating that his execution units are of a convention, old, well known, design.

8.7. That: "Claims 21, 33, and 43, set forth a plurality of partial product selectors to insert an element of a plurality of elements of a packed data into and substituting for bit positions of one or more partial products and add the plurality of elements together.

On the other hand, Lee's method generates control inputs to force to logic zero bit positions that do not correspond to the bit positions of an element to be added."

This is not found persuasive because applicant has clearly misunderstood the teachings of Lee as applied to the broad claim language. Applicant's claim language (e.g., claim 21) requires "product[ing] a first plurality of partial products in a multiplier having a plurality of partial product selectors". As seen in table 5 of Lee (col. 5) a first plurality of partial products (diagonal aligned set of eight data values in the center of the figure) is produced in a multiplier (Lee is for performing addition by using a multiplier) having partial product selectors (some values in the diagonal row are zeros, some values have been forced to zero (*), each of which is a "selection" operation). "Insertion of an element (abcd) or a first plurality of elements (abcd, efgh) of a first packed data (abcdefgh) into and substituting for bit positions of one or more of the first plurality of partial products by using partial product selectors corresponding to the bit positions." From table 5 we find a first packed data (abcdefgh) having two elements (abcd, efgh) where an element (abcd) has been inserted into a partial product (first row of diagonal set of rows containing "a b c d * * * *") substituting for bit positions of the first partial product (utilization of Lee's system as a multiplier would have substituted "a b c d e f g h" into the first row); and "adding (col 5 line 54-56, "tree add") the elements together to produce a first result ("0 0 0 0 0 0 0 Z Z Z Z Z 0 0 0 0") having a field (Z Z Z Z Z) comprising a sum (ZZZZZ is the sum of abcd and efgh) of the first plurality of elements, the field having a least significant bit (the right most Z is the least significant bit, however, as all sets of bits must inherently have both a least significant and most significant bit, applicant has merely claimed that which is inherent).

8.8. That: "Further, Lee aligns data from one input in partial products through use of

another input value. Each bit of the second input value is set to zero except for a first subset of bits, starting with the low order bit which are set to one at intervals equal to a bit length of each addend ([Lee] col. 1 lines 47-55). The vis_pdist() instruction of Sun already has three source operands, one of which is also the destination (p. 88, first paragraph). To perform the alignment in partial products as suggested by Lee a fourth source operand would be necessary. Sidwell's system provides no third path for source inputs to packed arithmetic unit 6, much less a fourth. ... Therefore Sidwell's system could not perform the alignment in partial products as disclosed by Lee for Sun's vis_pdist() instruction without substantial modification to the method or apparatus disclosed, and such modification, was not taught, suggested, or motivated by Lee or by Sidwell.

This is not found persuasive because firstly, applicant is reminded that the test for obviousness is not what is specifically and particularly disclosed by the references but that which the references cause one of ordinary skill in the art to recognize, as pointed out in a prior paragraph. Secondly, applicant's argument begins from the erroneous preface that the "second input value" must necessarily be part of an instruction set operand value, which is wholly incorrect and not at all indicated by any of the references. Lee taught that the multiplier (which normally receives two values in normal multiplication operations) instead receives one packed data value, and one coded data value that indicates the bit length of each subfield in the first data value (col. 1 lines 43-58). So the multiplier itself consumes no more data values than it previously consumed, that is two. Therefore, there is no "fourth" data value that must be included in an instruction word as argued by applicant. Additionally, as clearly indicated by Lee, the special coded value submitted to the multiplier is directly related to the bit width of each sub-component of the packed data value (col 1, lines 50-52). As the hardware of the system must inherently know the size of the sub-components of the packed data operand upon which it is being called to operate, it is clear from Lee's teachings to anyone of skill in the art that the special coded value submitted to the multiplier as it's second input is simply generated by the hardware from the length of the sub-components of the packed data value. Accordingly, no change to the instruction set is needed, as per the teachings of Lee, for combining Lee's high speed addition of packed data values system into Sun and Sidwell's system.

9. A shortened statutory period for response to this action is set to expire 3 (three) months

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and 0 (zero) days from the mail date of this letter. Failure to respond within the period for response will result in **ABANDONMENT** of the application (see 35 USC 133, MPEP 710.02, 710.02(b)).

10. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Richard Ellis whose telephone number is (571) 272-4165. The Examiner can normally be reached on Monday through Thursday from 7am to 5pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Eddie Chan, can be reached on (571) 272-4162. The fax phone number for the USPTO is: (703)872-9306.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-2100.

Richard Ellis
January 4, 2005


RICHARD L. ELLIS
PRIMARY EXAMINER